

DETAILED ACTION

Response to Amendment

1. Applicant's amendment and remarks received 23 September 2010 has been entered.

Allowable Subject Matter

2. Claims 15-22 are allowed.

3. The following is an examiner's statement of reasons for allowance: Regarding independent claim 15, the prior art of record neither shows or suggests a light permeable fluorescent cover to be attached on a light emitting diode comprising, in addition to other limitations of the claim, a fluorescent material comprising at least one of fluorescent lanthanoid aluminates activated with manganese shown by at least one selected from chemical formulae: $\text{LaAl}_{11}\text{O}_{18}:\text{Mn}^{2+}$, $\text{La}_2\text{O}_3\cdot 11\text{Al}_2\text{O}_3:\text{Mn}^{2+}$, $\text{La}_{1-x}\text{Al}_{11(2/3)+x}\text{O}_{19}:\text{Mn}^{2+}_x$ ($0.1 \leq x \leq 0.99$), $(\text{La}, \text{Ce})\text{Al}_{11}\text{O}_{19}:\text{Mn}^{2+}$, and $(\text{La}, \text{Ce})\text{MgAl}_{11}\text{O}_{19}:\text{Mn}^{2+}$, the fluorescent material having 0.4 to 0.8 manganic content ratio.

4. The closest prior art of Soules (US 6,252,254) to independent claim 15 teaches, in Figure 1, a light-permeable fluorescent cover (14) to be attached on a light emitting diode (12) which emits blue light, the cover comprising a fluorescent material for producing green and red lights upon excitation by the blue light (col. 1, ln. 50-55), wherein the first, second and third lights are mixed into a white light (col. 2, ln. 27-30). However, Soules fails to exemplify the fluorescent material comprising at least one of fluorescent lanthanoid aluminates activated with manganese shown by at least one selected from chemical formulae: $\text{LaAl}_{11}\text{O}_{18}:\text{Mn}^{2+}$, $\text{La}_2\text{O}_3\cdot 11\text{Al}_2\text{O}_3:\text{Mn}^{2+}$,

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$\text{La}_{1-x}\text{Al}_{11(2/3)+x}\text{O}_{19}:\text{Mn}^{2+}_x$ ($0.1 \leq x \leq 0.99$), $(\text{La}, \text{Ce})\text{Al}_{11}\text{O}_{19}:\text{Mn}^{2+}$, and $(\text{La}, \text{Ce})\text{MgAl}_{11}\text{O}_{19}:\text{Mn}^{2+}$, the fluorescent material having 0.4 to 0.8 manganic content ratio, as recited in independent claim 15 of the instant application. Due to their dependencies upon independent claim 15, claims 16-22 are also allowable.

5. The subject fluorescent material described earlier is provided for achieving sharp emission spectra or excellent colorific balance as a transmission color liquid crystal display. The design is new and unique to the art.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571)272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minh-Toan Ton can be reached on (571) 272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Kevin Quarterman
Examiner
Art Unit 2889

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Primary Examiner, Art Unit 2889

/K. Q./
Examiner, Art Unit 2889
7 November 2010